KELLEY DRYE & WARREN LLP

A LIMITED LIABILITY PARTNERSHIP INCLUDING PROFESSIONAL ASSOCIATIONS

1200 19TH STREET, N.W.

SUITE 500

WASHINGTON, D. C. 20036

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December 3, 1997

ROBERT J. AAMOTH

DIRECT LINE (202) 955-9676

E-MAIL: raamoth@kelleydrye.com

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
1919 M Street, N.W.
Room 222
Washington, D.C. 20554

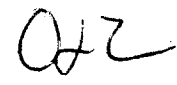Re: Ex Parte Submission in CC Docket No. 96-262

Dear Ms. Salas:

On behalf of the Competitive Telecommunications Association ("CompTel"), I am submitting on the record in the above-referenced proceeding the attached "Affidavit of Gerard J. Mulcahy On Behalf Of Bell Atlantic - New York." That affidavit presents the results of a review conducted by Coopers & Lybrand L.L.P. of Bell Atlantic - New York's delivery of Operations Support Systems. The Coopers & Lybrand review was addressed in the "Affidavit Of Joseph Gillan On Behalf Of The Competitive Telecommunications Association," Case 97-C-0271 before the Public Service Commission in New York, which CompTel previously submitted on the record in this proceeding.

Respectfully submitted,

Robert J. Aamoth

cc: Mr. Kyle Dixon
Mr. Paul Gallant
Ms. Jane Jackson
Mr. Richard Metzger
Mr. Thomas Power

--x

Petition of New York Telephone Company :

for Approval of its Statement of Generally :

Available Terms and Conditions Pursuant to :

Section 252 of the Telecommunications Act :

of 1996 and Draft Filing of Petition for InterLATA :   Case 97-C-0271

Entry Pursuant to Section 271 of the Telecom- :

munications Act of 1996 to Provide In-Region, :

InterLATA Services in the State of New York :

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AFFIDAVIT OF GERARD J. MULCAHY

ON BEHALF OF BELL ATLANTIC - NEW YORK

STATE OF NEW YORK   }

                 }   ss:

COUNTY OF NEW YORK }

Gerard J. Mulcahy, being duly sworn upon oath, deposes and states as follows:

1.   My name is Gerard Mulcahy and I am a Principal in Coopers & Lybrand

L.L.P.'s ("C&L") Telecommunications & Media Consulting Practice. My

business address is 1301 Avenue of the Americas, New York, NY 10019.

2.   The purpose of my affidavit is to present the results of our review of BA-NY's

delivery of Operations Support Systems ("OSS") used to provide wholesale

services to CLECs.

B. SUMMARY OF AFFIDAVIT

6. I led the multi-disciplinary C&L team which reviewed Bell Atlantic-New York's ("BA-NY"), formerly New York Telephone, OSS with respect to its ability to provide services to Competitive Local Exchange Carriers ("CLECs"). Our review focused on the OSS support made available by BA-NY to CLECs. The C&L team was comprised of consultants with experience and relevant backgrounds in telecommunications, systems consulting, process engineering, simulation modeling, and telecommunications regulation.

7. Our review was conducted over a period of approximately 70 days, and among other things, tested the ability of the current OSS's to actually process projected 1998 activity volumes within the performance standards specified by the company. Specifically, we reviewed a test in which BA-NY processed over 15,000 orders in three days and compared the test results to the company's performance targets. Additionally, our review included analysis of BA-NY's current OSS functionality, capacity, and performance to assess comparability to retail operations.

8. Overall, our analysis demonstrated that the company can successfully process expected total 1998 order volumes. Furthermore, the test results showed that the company can process these volumes at performance levels consistent with either company standards or retail operations. I have provided below a summary of our key findings for each of the five process areas covered in the review. Detailed descriptions of our analyses, with supporting exhibits, for pre-order, order,

data also showed comparable performance for wholesale and retail provisioning operations in terms of meeting performance targets. In addition, we performed a time and activity study which concluded that BA-NY can currently complete UNE-loop conversions for at least 285 lines per day per central office. Although regionwide capacity is now limited to 300 lines per day because of current staffing levels for centralized functions, this constraint can easily be relieved with the redeployment of existing personnel.

Billing

12.   Our test showed that BA-NY accurately accounts for usage associated with wholesale customer calls. In addition, we found that BA-NY consistently delivers the usage data to CLECs within defined performance parameters.

Maintenance and Repair

13.   The results of time and activity studies of the trouble reporting component of the M&R process shows comparable retail and wholesale performance levels. In addition, our analysis confirmed that the trouble resolution system is the same for wholesale and retail operations.

14.   Over the course of the design and implementation of the tests, BA-NY was able to use pre-testing trials to identify problems in its systems and to institute corrective action that significantly improved throughput and processing performance. During this time, the company also continued to extend and enhance its operational support systems in order to serve CLECs.

customer's services as requested by a CLEC.

Billing: The processes by which BA-NY collects and reports customer usage data, distributes the data to the appropriate CLECs, facilitates adjustment and claim processing, and bills CLECs for wholesale services.

Maintenance & Repair (M&R): The processes by which BA-NY assists a CLEC in identifying, analyzing, and resolving problems (i.e., "troubles") reported on resold or Unbundled Network Element ("UNE") services furnished to a CLEC customer.

16. We reviewed the operational support systems for the stated wholesale delivery processes in light of the following criteria:

REVIEW CRITERIA

Functionality: Do the operational support systems deliver the process functions which BA-NY has indicated are required to support CLEC market entry?

Capacity: Is BA-N capable of receiving and processing the volumes that are expected from current and 1998 anticipated CLEC operations?

Parity/Performance: Can BA-NY process current and anticipated volumes at performance levels similar to BA-NY's retail operations, or at the performance levels specified by company targets?

REVIEW APPROACH BY PROCESS

17. We designed our approach to ensure that we addressed all five processes against each of the review criteria. An integral part of the approach was the design of an end-to-end test that simulated actual CLEC orders going through BA-NY's wholesale ordering, provisioning and billing processes. The volumes used in the

Third, we evaluated the results of the end-to-end test to measure the company's ability to process expected 1998 volumes.

Provisioning

20.   To evaluate the functionality, capacity and performance of the wholesale provisioning process, we employed three separate analyses. First, we used a sample of comparable retail and wholesale service orders to evaluate systems and databases for commonality of process. Second, we used historic performance data and the results of the end-to-end test to measure performance for wholesale and retail operations as well as the company's ability to process the level and type of orders included in the 1998 test volumes. Third, because of their special provisioning requirements, we conducted time and activity studies of live production orders to determine the company's capacity to provision UNE-loop conversion orders.

Billing

21.   Our analysis of the billing process focused on measuring the timeliness of the production and distribution of the customer daily telephone usage data files to CLECs, and assessing the commonality of the process for capturing usage data across wholesale and retail operations. We also tested the accuracy of the company's processes for recording usage data through an analysis of test calls.

Maintenance and Repair ("M&R")

22.   M&R was evaluated independently of the end-to-end test and other analysis. The key objective of our review was to understand areas of process commonality and

which used available and unused company lines, and actual BA-NY employee accounts as the source of its service orders. The UNE-loop and Centrex order types were limited to the number of existing production orders actually submitted by CLECs because of the difficulty in constructing these types of orders for delivery through the "test CLEC". Exhibit C-1 shows total test volumes.

26.   The total volumes processed during the test were designed to stress the processes and systems and exceed 1998 projected volumes. Because of its importance to the end-to-end test, we evaluated the company's test volumes for reasonableness. Specifically, we compared the test volumes to the company's 1998 projected wholesale volumes.

27.   The results of our review of the company's projections appear in Exhibit C-2. As the exhibit shows, we found that the test volumes were significantly greater than 1998 projections. Additionally, we determined that the test volumes also generally reflected the distribution of order types projected for 1998.

28.   A central feature of the test was the establishment of a test-CLEC that simulated the operations of an actual CLEC placing orders in BA-NY's New York market. The test-CLEC performed typical CLEC functions, including: (1) transmitting the order requests to BA-NY via the electronic gateways; (2) responding to a subset of queries from BA-NY to test that the function worked (where there was an error or omission pertaining to the service request); and (3) receiving firm order confirmations (indicating that the service request was ready for provisioning) and service order completion notices (indicating that provisioning was complete).

ATTACHMENT 1

DETAILED ANALYSIS

D. Detail of PRE-ORDER ANALYSIS

Objective

The objective of the pre-order analysis was to evaluate the system's ability to provide access to the correct customer records and the databases necessary to produce a service request. Specifically, we assessed the company's capacity to process expected 1998 volumes of pre-order transactions and we evaluated relative wholesale and retail pre-order transaction performance.

Current Situation

Most CLECs currently access pre-order information using a Web site developed for wholesale customers. CLEC service representatives enter customer information into fields on the site, then forward the request to BA-NY. The requested information is compiled from the back-end systems and sent to the CLEC in a standardized readable format. At that time, the CLEC can either read the information on the screen or print it out.

CLECs can also access pre-order information by constructing their own applications that work directly with the company's systems. BA-NY has published standards and parameters (BA-NY's EIF protocol) describing the requirements for these application-to-application interfaces.

Exhibit D-1 and D-2 present schematics of how the company's wholesale and retail pre-order systems interact with legacy back-end systems to support pre-order functionality, by order type. As exhibit D-1 shows, the same systems and databases are used by both the wholesale and retail operations.

Exhibit D3-a presents historical pre-order transaction volumes. As the exhibit shows, a total of approximately 118,000 mechanized pre-order transactions were processed by the company during the January to September 1997 period. Using September data (the highest month), this equates to an average daily pre-order transactions volume of approximately 1,500 per day. The company currently tracks volume levels for five pre-order transaction types including customer service records retrievals, address validations, product and service availability queries, due date availability queries, and telephone number availability and reservation. The majority (over 75%) of wholesale pre-order transactions for September 1997 were requests for customer service records.

pre-order transactions per order (the current ratio is 2.6 transactions per order). This calculation provided a per day transaction volume of approximately 30,400 or 3,800 per hour, assuming an 8 hour day. We also assumed that these transactions would not be spread evenly throughout the day; rather they would peak at certain hours during the day. We therefore increased the average hourly value of 3,800 by 50% to 5,700 transactions per hour.

The stress test response time performance was compared to historic wholesale response time metrics to assess the system's relative performance in a high volume situation.

Results

The results of our review showed that the company currently provides the functionality to allow CLECs to conduct pre-ordering activity for the resale and UNE services included in the test and can do so at performance levels within 4 to 10 seconds those experienced by retail operations.

The results of the electronic stress test show that the company can process under existing systems capacity, at least 5,765 pre-order transactions per hour or 46,120 per eight hour day. This is more than three times the anticipated 1998 average volume of 15,245 total transactions per day, (see Exhibit D-5).

At these high volumes, the average CSR response time during the stress test was 7.7 seconds; the average response time for the other pre-order transaction types was 17.2 seconds. This compares to retail performance of 0.1 and 0.6 respectively for CSR and other transaction types for the same time period. Details of the stress test results are shown in Exhibit D-4.

Under typical operating conditions, the pre-order performance levels improve significantly. During the two average days of the end-to-end test CSR, response time was 4.7 seconds and other transaction response time was 10.6 seconds. This level of response time was supported by September results showed CSR response time at 3.1 seconds and other transaction response time at 11.1 seconds (see exhibit D-3b).

To put the difference in wholesale and retail response time in perspective, it is worthwhile to consider a practical example. A new line customer service order contact presently takes BA-NY on average 25 minutes to complete and typically requires four pre-order transactions (one CSR and three other transaction types). Assuming it would take a CLEC approximately the same amount of time for the same order type, the incremental difference for the wholesale processing time over retail amounts to 58 seconds or about 4% of total customer contact time, if we use the higher response times measured during the stress test. If we use the times measured on the two average days of the end-to-end test, this difference drops to 35 seconds or only 2.3%.

BA-NY's UNE-loop order center has been operational since June 1995. Although the company provides CLECs with the ability to send orders electronically, approximately 95% of orders have been received by fax. Today, almost 100% of the UNE-loop orders are business orders. UNE-loop conversions accounted for over 50% of total UNE-loop orders from January 1997 through June 1997. Other order types include new line orders, disconnects, interim number portability only (INP) orders, and complex orders (Centrex, ISDN, etc.). To date, BA-NY has received very few for unbundled switching. Ten CLECs are currently sending UNE-loop orders to the company.

The New England UNE center has been operational since June 1997 and has received approximately 209 orders for UNE-Platform since the center began operating. All UNE-platform orders are transmitted electronically over EIF. Today, the order mix consists of 10% business and 90% residential orders. Conversion orders ('as is' and 'as specified') are predominant. Other order types include new line orders, subsequent orders and inter-office facilities orders. Two CLECs are currently sending orders to this center.

ICT has been working with BA-NY since October 1996 and has, as of September 30, 1997, processed over 11,300 orders. At present, all orders for ICT processing are routed electronically from BA-NY to ICT. Thus far, ICT has processed only those live simple resale orders requiring manual intervention. However, as part of the end-to-end test ICT personnel hired and trained, in just a few weeks, a group of people to handle simple platform orders. ICT has established training and infrastructure to increase the number of representatives to handle order volumes as needed.

Resale Order Process

All CLEC orders are sent electronically via a Web interface or a custom-designed CLEC EIF or EDI interface. Exhibit E-1a shows a process flow of the wholesale resale order process. As the exhibit shows, orders are received by BA-NY through the wholesale ordering interface that gives the CLECs access to BA-NY's OSS. The following paragraphs describe how an order is processed after the company receives it.

First, the order is checked electronically in the wholesale ordering interface for certain types of basic errors (e.g., the required number of pages for a service order). If an error is detected, the order is automatically sent back to the CLEC along with a description of the error.

Second, the order can pass through the wholesale ordering interface into the order processor where it is also checked for other types of errors (e.g. content errors, wrong billing telephone number, etc.). If errors are found in the order at this point, the order is sent back electronically, along with a description of the error to the CLEC for correction. In September, an average of 25% of the orders were sent back to the CLEC.

Third, an order can reach the order processor system and "drop out" for manual processing by the Resale Service Center or ICT. Orders that follow this path include simple resale order types that have not yet been designed to flow-through the order

In the UNE-loop center, once a faxed order is received, it is reviewed by one of the center area managers, entered into an order log, and distributed to a service order representative. The service order representative checks the order for errors. If there are errors, the service order representative calls to alert the CLEC and waits for a response. If there are no errors, (or once a response is received), the service order representative double checks pre-order activities, and then begins typing the order into the service order processor. Once the service order representative completes entry into the order processor, he/she documents relevant order information to be sent to the BA-NY Installation and Maintenance group, and completes an order confirmation sheet to fax to the CLEC.

Potential delays may result along the ordering process for CLECs who do not use the electronic interface. These CLECs can only perform CSR pre-order activities and not other pre-order activities. As a result, orders generated by these CLECs may not have undergone an adequate level of pre-order verification which may cause delays in the order process.

Complex Order Process
All orders requiring design, as well as resale orders over 20 lines and UNE-loop orders over nine lines, require manual order processing. Order activities are more time-consuming with complex orders. For example, UNE orders with over nine lines require the BA-NY service order representative to call BA-NY engineering the BA-NY technical center to request pre-survey work, and the BA-NY underground center to reserve lines. Centrex orders require the BA-NY service order representative to call the engineering center to request pre-design work and the Line Assignment Center to reserve a cluster of lines. The same group using the same systems and processes for both retail and wholesale orders handles complex orders.

CLEC Notification during the Order Process

CLECs receive notifications from BA-NY at various points in the order process, including confirmation or rejection of the order and completion of the order. The performance measures used in the ordering process measure the timeliness of notification to the CLEC at each stage of the process. Exhibit E-4 shows the stages of the ordering process when the CLEC receives notification from the company.

If the electronic order is prepared or written incorrectly, the CLEC will receive an error message indicating that the CLEC's order cannot be accepted by the wholesale ordering interface or the order processor. The error description is attached to the order and sent back to the CLEC for correction. The CLEC also receives a 'query' from a BA-NY service order representative if the order requires manual attention, the details of which are contained in the *order rejection notification*. Historically the company has only tracked rejects for potential flow-through orders, i.e., Level 5 orders. Exhibits E-5c and E-5e provide more historical results for order reject rates and timeliness of order rejection notification, respectively.

To evaluate the functionality of the ordering process systems, we reviewed historic performance relative to live production. We also included the dominant order types within the end-to-end test that the company expected at that time, to receive in 1998. Our review of the end-to-end test results allowed us to evaluate the functionality of the ordering process for each of these order types.

To evaluate ordering performance, we reviewed historical data and the results of the end-to-end test. These results for the ordering process were evaluated relative to the standards established by the company. The specific ordering metrics employed during the end-to-end test included:

- Order Volume By Type
- Percent Flow-Through
- Order Reject Rate
- Order Reject Timeliness
- Order Confirmation Notification Timeliness
- Order Completion Notification Timeliness

Results

The results of the end-to-end test indicate that BA-NY is capable of processing expected 1998 total order volume through its ordering processes, while operating at performance levels that meet or exceed the company's standards. During the high volume day of the end-to-end test, the company successfully processed 7,453 orders through the ordering process. This is approximately six times the company's projection for a 1998 average day. (See Exhibit C-2). Over the three days of the test, the company successfully processed a total of 15,330 service requests to order confirmation. See Exhibit E-6 for a further breakdown of orders processed by day. During the same time frame, 1,140 orders were rejected by the company and sent back to CLECs due to errors detected by the ordering OSSs. The following table shows the processing of test orders during the three-day end-to-end test.

	Resale	UNE	Total
Total Orders Processed	12,865	2,465	15,330
Flow-through	11,131	0	11,131
Manual Processed	1,734	2,468	4,202
Confirmed	11,748	2,445	14,193
Rejected	1,117	23	1,140

The test also demonstrated that the company could identify and process CLEC errors. This includes errors detected as the order initially entered the ordering interface as well as errors detected by the back-end ordering OSSs. Specifically, the test CLEC intentionally submitted 20 errors during the end-to-end test. All of these errors were detected by the company and returned to the test CLEC with electronic notifications of

In addition to these timeliness measures, we also monitored BA-NY's flow-through capabilities. During the test, 87% of resale orders and 73% of total orders submitted flowed-through the ordering processes without manual intervention. As demonstrated by the end-to-end test, the ordering OSSs currently support flow-through capabilities for resale orders including resale new, resale as-is and certain resale with change order types.

Our review of the systems utilization for the above wholesale ordering system showed that there is also additional capacity available. Specifically, ordering systems capacity utilization averaged 35% during the two average volume days and 54% during the peak volume day. Systems utilization peaked at 66% during the peak day. The results of these tests are detailed in Exhibit E-9. The performance of each of the centers is also reflected in the detail provided in Exhibit E-10.

Our analysis of order system throughput shows that the current ordering OSS can process a maximum of 1,742 orders per hour. Assuming the systems were operating at capacity for an eight hour day, the company could process approximately 14,000 orders a day. Exhibit E-9 shows the throughput per hour and systems capacity utilization over the course of the end-to-end test.

During the pre-test preparation, the company added hardware components and tuned the software to significantly increase processing to the levels shown above. This was accomplished over a period of approximately three weeks. This indicates that, to the extent the limiting factor is similar hardware components, the company can further expand capacity in a relatively short period of time.

The results of our analysis of manual processing capacity show that the company's current capacity is approximately 4,510 orders per day covering all five order centers (Exhibit E11). Exhibit E-10 shows the results of our time and activity studies, which were the basis of our estimate of processing times for each of the five order centers. Manual processing performance for each of the centers is shown in Exhibit E-12.

The table below shows current staffing levels, and our estimate of order capacity per day.

Order Center	Service Representatives	Average Processing Time Per Order	Estimated Order Capacity Per Day
NY UNE-loop Center	17	26.0	255
NE UNE-platform Center	30	6.6	1,773
NY Resale Center	39	13.0	1,170
NE Resale Center	31	18.0	672
ICT Overflow Center	11	6.7	640 (Resale)
TOTAL	**128**		**4,510**

In contrast to orders that are electronically provisioned through the existing retail process, the provisioning process for UNE-loop conversions (i.e., UNE-loop "hot-cuts") must rely on a largely manual process. The retail provisioning systems support the process, but a manual process is required to coordinate the physical "cut" of the service from BA-NY to the CLEC. No direct retail analog exists, and, therefore, performance is measured against a standard i.e., provisioning completion of UNE-loop orders within six days.

The Carrier Account Team Center (CATC) coordinates the activities of the Recent Change Memory Administration Center (RCMAC), central office, and, when relevant, the CLEC. The CATC coordinates the translations work (e.g., software updates at the switch) with the RCMAC and then calls the Central Office and the CLEC to manage the actual hot-cut. Through these calls, the CATC monitors progress in provisioning the orders, resolves problems, and coordinates the team's activities. Exhibit F-2 shows the process flow for the UNE-loop "hot cut" process.

Presently, the CATC and RCMAC have twelve and four people, respectively, dedicated to wholesale operations. The twelve CATC central office technicians perform coordination activities for the hot-cut. The four translation attendants at the RCMAC update the switch translations.

The metrics used by BA-NY for all orders except UNE-loop conversions focus on measuring the timelines of planned provisions (Installation Intervals Offered), the timelines of actual provisioning (Installation Interval Completed), and the percentage of orders that are not completed by the due date on the order confirmation (Percentage Missed Appointments). Our review of BA-NY's retail and wholesale historical performance metrics also indicates that the two processes are comparable and that in some instances the results for the performance of the wholesale orders are better than those of the retail orders. The historical average intervals offered and completed for resale orders requiring dispatch were better than the comparative retail intervals and within two days for orders requiring no dispatch. UNE-loop and UNE-platform historical offered and completed intervals are better than the resale equivalents. Similarly the quality of the wholesale provisioning processes as reported in the percentage installation troubles within 30 days is lower for wholesale orders compared to the retail comparatives. The company's performance relative to missed appointments for wholesale dispatch orders is better than the retail comparative. In September, 7% of resale orders were missed compared to 16% for retail orders. Orders requiring facilities or no dispatch have a low incidence of missed appointments, i.e. less than 1%. Details of historical performance measures are shown in Exhibit F-4a through F-4d.

Approach

Our initial steps at defining the wholesale provisioning process included interviewing management and line personnel as well as reviewing internal documentation, covering methods and procedures, handbooks, and internal process maps. We interviewed

We also used the end-to-end test to complement our analysis. During the test we observed which order types were electronically processed through the provisioning systems, reviewed the functionality of the process, and compared the wholesale and retail processes. We also analyzed performance measurements captured during the end-to-end test to evaluate systems and processes ability to handle expected average daily 1998 order volumes.

Results

Our review showed that the wholesale and retail provisioning processes are the same for all order types in the scope of our review with the exception of UNE-loop conversion orders. The company uses the same systems, supporting processes, trained staff, and capabilities to provision business and residential resale orders (new connects and conversions), complex resale (Centrex new connects and conversions), new unbundled loops, and unbundled platform orders, as it uses for its retail operations. Exhibit F-3 describes in detail the results of our analysis of the retail and wholesale order samples traced through the provisioning process.

The results of the end-to-end test confirmed historical performance. Key results for the test are shown in the following chart and further detailed in Exhibit F-5.

Performance Metric	Test – Resale orders	Test – UNE orders	Retail Cumulative
Installation intervals – offered (days)	1.9	1.8	0.8
Installation intervals – completed (days)	1.9	1.8	0.8
Percentage missed appointments	0	0	1.7

Results for the end-to-end test for all orders received over the three-day period and provisioned by October 22, 1997.

There are no measurements available for the end-to-end test orders where troubles are reported within thirty days of the date provisioned.

Our review of the systems utilization for this process showed that there is also additional capacity available in excess of that presently required to process orders. The results of these tests are summarized below and detailed in Exhibit E-8.

System	Peak Utilization
SOP	37%
FACS	38%
WFA	89%

Because they follow a distinctly different process from other wholesale/retail orders, we addressed UNE-loop conversions separately. The activities associated with a hot-cut are subject to state Commission requirements resulting from arbitrations that the

relates to the number of trained personnel, which currently is 12. Assuming the company redeploys other trained personnel from within the company, it could meet UNE-loop conversion volume increases.

While our analysis considered UNE-Platform orders, the Company has recently decided not to offer UNE-Platform. Based on our understanding of the process that the company will use for local switching, it will connect directly to a CLEC cross connect point with feeds from the main distributing frame and to the switch ports. As is the case with UNE-loops described above, the capacity constraint for loops and ports provisioned together is the laying-in of cable at the central office. At any given office, the amount of lay-in work associated with orders for loops and ports provisioned together is approximately twice that of a UNE-loop. Therefore, if a central office were to perform only those lay-ins necessary for the provisioning of loops and ports, its capacity to provision loops and ports together would be roughly half that of its capacity to provision UNE-loops. Therefore, we would estimate that the daily capacity for provisioning loops and ports in combination is between 143 and 385 lines per day per central office. Because of the way the company intends to provision this service, there should not be any capacity constraints at the RCMAC or CATC.

G. Detail of BILLING ANALYSIS

Objective

The purpose of the billing analysis was to evaluate the ability of the company to capture and provide CLECs with accurate wholesale usage data in a timely manner. We did not evaluate the accuracy of the wholesale bill or the amounts charged for each service or product type.

Current Situation

Customer billing comprises the accumulation, rating and invoicing of usage and recurring and non-recurring charges. In order to enable CLECs to bill their customers, BA-NY supplies CLECs with usage information for all switch- based wholesale customers (including resale and certain UNE) on a daily basis. BA-NY also provides CLECs with a monthly bill for the wholesale usage, recurring and non-recurring based charges payable by the CLEC for the network infrastructure utilized in providing the local telephone service to the wholesale customers. It is the CLEC's responsibility to generate recurring and non-recurring charges based on the customer's products and services, combine it with the usage charges and bill the end customer.

BA-NY uses existing systems to accumulate and provide CLECs with the usage billing information. However, additional functionality had to be added to the billing applications to accommodate the billing of non-recurring and recurring charges to CLECs, as well as to produce the wholesale bill. Additional functionality was added to the CRIS

The billing process for usage for unbundled local switching, ISDN and Centrex is similar to resale billing. As for resale, AMA/MCRIS creates the EMR files to provide the usage information recorded by BA-NY switches to the CLECs. The main difference occurs in the transmission of billing usage information from AMA/MCRIS to CABS. Usage data for UNEs does not pass through the BCRIS application, but is sent directly by AMA/MCRIS to CABS.

The CABS application calculates the usage based charges, as well as the relevant recurring and non-recurring charges. It matches the charges with payment and adjustment transactions to calculate the outstanding balance, and produces the wholesale bill. UNE wholesale bills are sent to CLECs once a month.

UNE loop service is not switch based, and therefore does not generate any usage records. The applicable charges are generated by the BCRIS application, and follow a very similar path to resale customers.

For the month of July 1997, BA-NY billed 27 CLECs for almost 14 million call records and recurring charges. Year-to-date through the month of July, the company billed CLECs for more than 58 million call records and recurring charges, and created 182 EMR tapes.

Approach

To assess the company's ability to accurately capture wholesale usage data, we compared the process for collecting wholesale and retail data, and conducted stand-alone usage tests. The usage test involved placing calls over 14 test lines comprised of six resale, six UNE-platform and two retail lines. We made the following types of calls from the test lines:

1. Local intraSwitch
2. Local interSwitch
3. Local toll
4. 1-800
5. IXC-out
6. 0+ collect
7. 0- operator assist
8. Phonesmart dial-back
9. Information Provider calls (976)
10. Directory Assistance with call completion (DACC)

In addition, we made long distance calls from the state of Pennsylvania to the wholesale lines. The calls were made to test BA-NY's ability to capture and provide

and STARREP provide similar functionality to users (see Exhibit H-2 for a listing of functions supported by each interface). In particular, both systems support testing the line for trouble, creating a trouble ticket, modifying a trouble ticket, closing-out a trouble ticket, manually overriding the system to request the dispatch of a technician, and accessing trouble ticket status and history. RETAS interfaces with all the same back-end systems as STARREP uses to perform the maintenance and repair tasks/functions. Six trouble transaction types are presently available for each system including: (i) Test, (ii) Create Transfer, (iii) Status Trouble, (iv) Modify Trouble, (v) Request Cancellation of Trouble, and (vi) Trouble Report History.

RETAS currently processes approximately 1,800 trouble tickets per month, which is approximately 0.5% of the total 366,000 retail trouble tickets per month processed through STARREP.

Upon receiving a trouble report from an end user and determining that the problem may be in the local loop, the CLEC service representative creates a mechanized line test (MLT) request in RETAS. BA-NY's loop maintenance operating system electronically tests the line and displays the results on a separate MLT response Web page. MLT is the same OSS that is accessed directly by a BA-NY retail representative. RETAS automatically determines the circuit type, geographic region and destination for the CLEC representatives, whereas BA-NY representatives must make these determinations and manually select the MLT service. If there is a problem detected in the local loop, the CLEC service representative can then create a trouble ticket request in RETAS. BA-NY processes this request and provides a trouble ticket confirmation number. An appointment date for the end user is then returned to the CLEC service representative on a trouble ticket response page. To check the status of a trouble ticket, the CLEC service representative creates a status request and receives the status on the corresponding status response page. This request/response environment is consistent across all of the RETAS functions.

CLECs are also able to modify a pending trouble ticket or close out a pending trouble ticket. Changes to a trouble ticket result in a subsequent report being forwarded to a CLEC. CLECs have further functionality to view the three most recently reported trouble tickets on line by generating a Trouble Report History.

For all six transactions noted above, RETAS provides the CLEC with additional automatic functionality whereas the BA-NY representative must manually perform these functions.

Although BA-NY has enhanced the functionality of RETAS to support UNE-loops and most other UNE's, it is not currently utilized by the CLECs to support unbundled loop maintenance. Trouble reports for unbundled loops are handled manually by a team of BA-NY service representatives and technicians. The service representative receives a trouble report from the CLEC and enters it directly into the Work Force Administration Control System (WFA/C). A technician coordinates all testing and repair, and

Results

The results of our maintenance and repair analysis show that the front-end wholesale and retail system interfaces provide similar functionality and that, on average, wholesale and retail troubles are resolved in similar time frames. In addition, the test of wholesale vs. retail processing by the back-end systems indicate that they use the same systems.

Our review of the front-end process shows that the combined system interaction time for the mechanized line test and trouble ticket creation is approximately 178 seconds for RETAS (wholesale) compared to 162 seconds in STARREP (retail). The difference of 16 seconds is less than 10% of total system interaction time. Exhibit H-3 details the comparison of interaction times by activity.

As discussed above, in many instances we found RETAS to have more functionality than STARREP. Additionally, based on discussions with an operating CLEC and internal BA-NY interviews, we found that training for RETAS required less time compared to STARREP. According to the company, training for RETAS takes 2 days compared to approximately 2 weeks of training for retail representatives using STARREP.

To test the back-end processes we selected five common trouble types and traced them through each system using the company system audit trail reports. As Exhibit H-4 shows, the same systems were used in the same sequence.

Historical maintenance and repair performance metrics are detailed in exhibits H-5a through H-5d. Various aspects of system quality were evaluated by comparing the individual components of the overall trouble report rate. We used network trouble report rates for our comparison of retail and resale, and combined central office and loop trouble rates for our retail to UNE loop comparison. Network trouble report rate showed no significant difference between retail and resale. For the last three months, the average network trouble report rate for retail was 1.5%, compared to 0.9% for resale. Combined central office and loop trouble report rate also showed no significant difference between retail and UNE loops. For the last three months, the average combined central office and loop trouble report rate was 0.5% for UNE loops, 0.9% for resale and 1.5% for retail.

Repair accuracy and effectiveness was evaluated by comparing repeat trouble calls within thirty days. Historical data for this measure showed that there was no significant difference between retail and wholesale. The average repeat trouble call rate for retail over the last three months was 15.8 %, compared to 15.0 % for resale and 1.3 % for UNE loops.

Repair timeliness was evaluated by comparing wholesale and retail mean time to repair (MTTR) values. Historical data for this measurement also showed that there was no significant difference between retail and resale MTTR. However, there was a larger difference between retail and UNE loops. The average MTTR rate for retail over the

IN THE MATTER OF THE SUPPLEMENTAL PETITION OF
BELL ATLANTIC-NEW YORK FOR AUTHORITY TO
PROVIDE IN-REGION INTERLATA SERVICES IN NEW YORK.

Scope and Approach

Section C
Scope and Approach

Exhibit C-2

Comparison of company volume projections to end-to-end test volumes

Number of Lines

Order Type	BA-NY Projections[3]	Test	
		Avg. Day[1]	Peak Day[2]
Resale[4]	1,499	5,171	9,326
UNE Loop & Platform[5]	341	695	1,314
Total	1,840	5,866	10,640

Number of Orders

Order Type	BA-NY Projections[6]	Test	
		Avg. Day[1]	Peak Day[2]
Resale[4]	993	3,447	6,217
UNE Loop & Platform[5]	341	623	1,236
Total	1,334	4,070	7,453

Notes:
1. Average day volumes are based on day one of the test.
2. "Peak Day" is based on day two of the test.
3. Projected volumes are based upon company projections (see exhibit C-2a).
4. Resale volumes include POTS and Complex orders.
5. Test UNE-loop volumes include live production only and show actual number of orders and their associated lines. BA-NY projections include total of UNE Links and Local Switching.
6. The following estimates were used to convert lines into orders: Resale 1.5 lines/order, UNE Loop and Platform equal 1 line/order.

Exhibit C-3a

End-to-end test

The "end to end" test was designed to evaluate Bell Atlantic-New York (BA-NY's) ordering, provisioning and billing operational support systems at volume levels anticipated in 1998. The scope of the test included centers that support the entire North region, but focused on the New York (rather than New England) area. The test was used as a basis of critically examining the functionality, performance, and current capacity of the processes and systems supporting the ordering and provisioning. C&L was responsible for monitoring the test and reviewing its results to support our findings in a number of areas.

A central feature of the test was the establishment of a test-CLEC who simulated the operations of an actual CLEC placing orders in the BA-NY's New York market. The test-CLEC performed the following functions: (1) transmitting the order requests to BA-NY via the electronic gateways; (2) responding to queries from BA-NY; and (3) receiving firm order confirmations (indicating that the service requested was ready for provisioning) and service order completion notices (indicating that provisioning was complete.

The test was designed to process approximately 15,000 orders through ordering, provisioning and billing. Orders from the test CLEC were submitted over a three-day period. The total production during the test included orders submitted both by the test-CLEC as well as live production from operational CLECs.

1998 Volume Projections

A key component of this review was evaluating the appropriate OSSs' during the test at expected 1998 volumes. An overview of the company's test volumes is shown in Exhibit C-1.

The end-to-end test volumes were designed to stress the systems and processes to a high degree with volumes in excess of projected 1998 activity. The projections show expected order volume and identify average and peak volumes days by order type. As part of our review we evaluated the test volumes against the company's projections. We found the test volumes to significantly exceed the 1998 projections. Exhibit C-2 includes the detail of our review of the 1998 volume projections.

Exhibit C-3d

End-to-end test (continued)

Pre-Test Trials

Over the course of the design and implementation of the end-to-end test, BA-NY was able to use pre-testing trials to identify problems in its systems and institute corrective action that significantly improved throughput and processing performance. Early pre-testing showed that the physical structure of the front-end systems, the physical ability to receive CLEC orders at high volumes, was lacking in the necessary throughput capacity. In investigating the cause and possible solution, the company identified other system architecture and software improvements. As a result, the company was able to improve overall throughput performance four-fold from trial stage testing until the actual end-to-end test was run on October 1.

Test Process

The ordering process followed the same process as that used by CLECs' placing orders with BA-NY. The service requests were prepared by BA-NY using actual customer account information and represent actual lines and services. The customer account details were verified through the pre-ordering systems and the individual service requests developed include all fields that would be required by an independent CLEC. Customer account files and associated service requests were given to the CLEC to be used for order transmission. Resale orders were transmitted by the CLEC to the BA-NY order processing system, via EDI. Based upon the information provided in the service request, they were either (1) processed through the ordering system to provisioning; (2) rejected by the systems and returned to the CLEC for completion of the orders; or (3) transferred to a representative for manual processing. Orders were allocated to the ICT overflow center for processing when order volumes reached certain levels.

UNE orders were transmitted via EIF by the CLEC to BA-NY's order processing systems. Since UNE orders require manual processing, all orders were sent to the CATC Center.

New line resale and UNE platform orders were also submitted by the test CLEC as part of the test. 150 of the new orders were processed through the system to installation, including the dispatch of trucks in the field. The remaining new orders were also submitted but "future dated" and deleted from the provisioning system following the test. This allowed testing of the input aspects of ordering and provisioning while not requiring the cost of actually "rolling a truck" or installing a drop to the home.

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Pre-Ordering Process